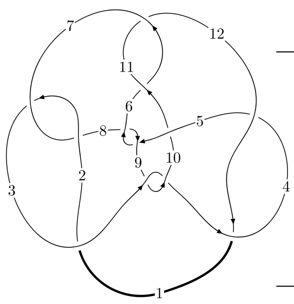
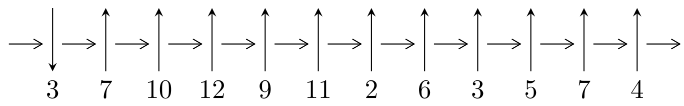
$12n_{0660}$ ($K12n_{0660}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$6,11 \xrightarrow[c_6]{} 2,7 \xrightarrow[c_2]{} 3 \xrightarrow[c_7]{} 8 \xrightarrow[c_8]{} 9 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_1]{} 1 \xrightarrow[c_5]{} 5 \xrightarrow[c_4]{} 4 \xrightarrow[c_{10}]{} 10 \twoheadrightarrow c_3, c_9, c_{12}$$

Ideals for irreducible components[2] of X_{par}

$$\begin{aligned} I_1^u = \langle & -11564599u^{15} - 9251046u^{14} + \cdots + 53220158b + 13391876, \\ & -43861146u^{15} - 59898749u^{14} + \cdots + 53220158a - 99727540, \\ & u^{16} + u^{15} + u^{14} + 2u^{13} + 9u^{12} + 9u^{11} + 16u^{10} + 9u^9 + 8u^8 + 19u^7 - 33u^6 - 6u^5 + 3u^4 - 33u^3 + 4u^2 + 3u - \\ I_2^u = \langle & -1.75232 \times 10^{59}u^{33} + 3.07107 \times 10^{59}u^{32} + \cdots + 1.28337 \times 10^{61}b + 1.83553 \times 10^{61}, \\ & 1.93452 \times 10^{60}u^{33} - 1.32279 \times 10^{60}u^{32} + \cdots + 1.28337 \times 10^{61}a - 1.86396 \times 10^{62},\ u^{34} - u^{33} + \cdots - 180u - \\ I_3^u = \langle & 1.97277 \times 10^{16}u^{25} + 6.79934 \times 10^{15}u^{24} + \cdots + 1.89124 \times 10^{16}b + 5.92285 \times 10^{16}, \\ & 6.86300 \times 10^{15}u^{25} - 1.50215 \times 10^{16}u^{24} + \cdots + 1.89124 \times 10^{16}a - 1.96975 \times 10^{16},\ u^{26} - 8u^{24} + \cdots + 4u - 1 \\ I_4^u = \langle & -u^2 + b - 1,\ a - u + 1,\ u^3 + u + 1\rangle \\ I_5^u = \langle & b - 1,\ a + 1,\ u - 1\rangle \end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 80 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$\boldsymbol{I_1^u = \langle -1.16\times 10^7u^{15} - 9.25\times 10^6u^{14} + \cdots + 5.32\times 10^7b + 1.34\times 10^7,\ -4.39\times 10^7u^{15} - 5.99\times 10^7u^{14} + \cdots + 5.32\times 10^7a - 9.97\times 10^7,\ u^{16} + u^{15} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.824145u^{15} + 1.12549u^{14} + \cdots - 7.08904u + 1.87387\\0.217297u^{15} + 0.173826u^{14} + \cdots - 2.02601u - 0.251632\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1.07004u^{15} + 1.41983u^{14} + \cdots - 9.19494u + 1.92358\\0.105243u^{15} + 0.195897u^{14} + \cdots - 2.12657u - 0.300078\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1.10638u^{15} + 1.15362u^{14} + \cdots - 1.22536u + 4.57509\\0.295873u^{15} + 0.428955u^{14} + \cdots - 1.45986u + 0.643823\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1.40226u^{15} + 1.58258u^{14} + \cdots - 2.68521u + 5.21891\\0.295873u^{15} + 0.428955u^{14} + \cdots - 1.45986u + 0.643823\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\-u^3 + u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1.32715u^{15} + 1.46973u^{14} + \cdots - 2.19396u + 5.38564\\0.376362u^{15} + 0.378182u^{14} + \cdots - 2.77171u + 0.956452\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.615985u^{15} + 1.01147u^{14} + \cdots - 9.98396u - 0.124338\\-0.166727u^{15} - 0.0916225u^{14} + \cdots - 1.31231u - 0.991434\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.749067u^{15} + 1.13559u^{14} + \cdots - 10.2278u + 0.171535\\-0.0503356u^{15} + 0.0874600u^{14} + \cdots - 1.71606u - 0.686604\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}1.75205u^{15} + 2.07302u^{14} + \cdots - 3.97175u + 6.28895\\0.386527u^{15} + 0.542106u^{14} + \cdots - 2.07567u + 0.749067\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{40466911}{53220158}u^{15} + \frac{23371529}{26610079}u^{14} + \cdots - \frac{846110475}{53220158}u + \frac{684608261}{53220158}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} + 15u^{15} + \cdots - 732u + 16$
c_2, c_7	$u^{16} + 5u^{15} + \cdots - 30u + 4$
c_3, c_6, c_9 c_{11}	$u^{16} - u^{15} + \cdots - 3u - 1$
c_4, c_5, c_8 c_{12}	$u^{16} + 2u^{15} + \cdots + 2u + 3$
c_{10}	$u^{16} - 6u^{15} + \cdots + 32u - 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 25y^{15} + \cdots - 540400y + 256$
c_2, c_7	$y^{16} + 15y^{15} + \cdots - 732y + 16$
c_3, c_6, c_9 c_{11}	$y^{16} + y^{15} + \cdots - 17y + 1$
c_4, c_5, c_8 c_{12}	$y^{16} + 22y^{15} + \cdots - 130y + 9$
c_{10}	$y^{16} + 2y^{15} + \cdots - 12288y + 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.304353 + 0.972075I$ $a = 0.50278 - 1.51617I$ $b = -0.285550 - 0.101448I$	$-4.22498 + 1.58731I$	$9.57126 - 4.28514I$
$u = 0.304353 - 0.972075I$ $a = 0.50278 + 1.51617I$ $b = -0.285550 + 0.101448I$	$-4.22498 - 1.58731I$	$9.57126 + 4.28514I$
$u = 0.963344$ $a = -1.08170$ $b = 1.15231$	4.93639	18.2520
$u = -1.113490 + 0.020930I$ $a = -1.059080 - 0.259286I$ $b = 0.93667 + 1.24298I$	$3.10928 - 2.74603I$	$11.38606 + 5.54848I$
$u = -1.113490 - 0.020930I$ $a = -1.059080 + 0.259286I$ $b = 0.93667 - 1.24298I$	$3.10928 + 2.74603I$	$11.38606 - 5.54848I$
$u = 0.431687 + 1.044540I$ $a = 1.081630 - 0.710533I$ $b = 0.548841 - 0.957392I$	$-5.91455 + 0.25172I$	$1.47661 + 0.31305I$
$u = 0.431687 - 1.044540I$ $a = 1.081630 + 0.710533I$ $b = 0.548841 + 0.957392I$	$-5.91455 - 0.25172I$	$1.47661 - 0.31305I$
$u = -0.50668 + 1.37706I$ $a = -0.002750 - 0.610446I$ $b = -1.002360 - 0.102183I$	$-8.11817 - 5.61695I$	$5.09400 + 3.95642I$
$u = -0.50668 - 1.37706I$ $a = -0.002750 + 0.610446I$ $b = -1.002360 + 0.102183I$	$-8.11817 + 5.61695I$	$5.09400 - 3.95642I$
$u = -0.361628$ $a = 0.476897$ $b = 0.311919$	0.559694	17.7300

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.243172 + 0.156892I$ $a = -0.78094 - 3.46394I$ $b = -0.825200 - 0.606999I$	$-3.15093 + 2.24302I$	$8.63814 - 3.97383I$
$u = 0.243172 - 0.156892I$ $a = -0.78094 + 3.46394I$ $b = -0.825200 + 0.606999I$	$-3.15093 - 2.24302I$	$8.63814 + 3.97383I$
$u = 1.27026 + 1.20475I$ $a = -0.782583 + 0.974911I$ $b = 2.42805 + 0.34147I$	$-16.2016 + 14.8675I$	$7.45320 - 6.24128I$
$u = 1.27026 - 1.20475I$ $a = -0.782583 - 0.974911I$ $b = 2.42805 - 0.34147I$	$-16.2016 - 14.8675I$	$7.45320 + 6.24128I$
$u = -1.43016 + 1.05558I$ $a = 0.843348 + 0.695582I$ $b = -2.53256 + 0.01545I$	$-15.1277 - 3.7434I$	$6.88958 + 1.90259I$
$u = -1.43016 - 1.05558I$ $a = 0.843348 - 0.695582I$ $b = -2.53256 - 0.01545I$	$-15.1277 + 3.7434I$	$6.88958 - 1.90259I$

II. $\boldsymbol{I_2^u = \langle -1.75 \times 10^{59} u^{33} + 3.07 \times 10^{59} u^{32} + \cdots + 1.28 \times 10^{61} b + 1.84 \times 10^{61},\ 1.93 \times 10^{60} u^{33} - 1.32 \times 10^{60} u^{32} + \cdots + 1.28 \times 10^{61} a - 1.86 \times 10^{62},\ u^{34} - u^{33} + \cdots - 180u - 3 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.150738u^{33} + 0.103072u^{32} + \cdots - 19.2920u + 14.5240 \\ 0.0136541u^{33} - 0.0239298u^{32} + \cdots + 7.15407u - 1.43025 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.127221u^{33} + 0.100766u^{32} + \cdots - 21.1701u + 12.9508 \\ 0.0120176u^{33} - 0.0123381u^{32} + \cdots + 3.26564u - 1.49388 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.125329u^{33} + 0.136598u^{32} + \cdots - 33.1044u + 23.4044 \\ 0.0207171u^{33} - 0.0109669u^{32} + \cdots + 2.15308u - 2.35556 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.104612u^{33} + 0.125631u^{32} + \cdots - 30.9513u + 21.0489 \\ 0.0207171u^{33} - 0.0109669u^{32} + \cdots + 2.15308u - 2.35556 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.242112u^{33} + 0.244691u^{32} + \cdots - 63.7284u + 45.5880 \\ 0.0310457u^{33} - 0.0424811u^{32} + \cdots + 11.6632u - 5.05191 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.275594u^{33} - 0.305067u^{32} + \cdots + 77.7390u - 49.3650 \\ -0.0182410u^{33} + 0.0204396u^{32} + \cdots - 5.00749u + 5.64922 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.258882u^{33} - 0.285726u^{32} + \cdots + 72.4607u - 49.4683 \\ -0.0432859u^{33} + 0.0437686u^{32} + \cdots - 10.7090u + 5.53801 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.221972u^{33} + 0.217908u^{32} + \cdots - 54.9480u + 40.9740 \\ 0.0269077u^{33} - 0.0347803u^{32} + \cdots + 11.5785u - 4.56490 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.00939630u^{33} + 0.0336814u^{32} + \cdots + 4.89386u - 28.6989$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{17} + 24u^{16} + \cdots - 9908u - 1296)^2$
c_2, c_7	$(u^{17} - 2u^{16} + \cdots - 26u + 36)^2$
c_3, c_6, c_9 c_{11}	$u^{34} + u^{33} + \cdots + 180u - 3$
c_4, c_5, c_8 c_{12}	$u^{34} + 2u^{33} + \cdots + 220u - 23$
c_{10}	$(u^{17} + 2u^{16} + \cdots + 16u + 31)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{17} - 76y^{16} + \cdots - 10988432y - 1679616)^2$
c_2, c_7	$(y^{17} + 24y^{16} + \cdots - 9908y - 1296)^2$
c_3, c_6, c_9 c_{11}	$y^{34} - y^{33} + \cdots - 33762y + 9$
c_4, c_5, c_8 c_{12}	$y^{34} + 26y^{33} + \cdots - 8794y + 529$
c_{10}	$(y^{17} + 8y^{16} + \cdots - 4084y - 961)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.090627 + 1.004540I$ $a = 0.471078 + 0.756650I$ $b = 1.016570 - 0.157313I$	$-0.10165 + 2.03616I$	$9.54232 - 0.44456I$
$u = -0.090627 - 1.004540I$ $a = 0.471078 - 0.756650I$ $b = 1.016570 + 0.157313I$	$-0.10165 - 2.03616I$	$9.54232 + 0.44456I$
$u = -0.795551 + 0.572843I$ $a = 0.712957 - 0.584252I$ $b = 0.560213 + 0.299882I$	$2.05813 - 5.15332I$	$19.0308 + 6.5118I$
$u = -0.795551 - 0.572843I$ $a = 0.712957 + 0.584252I$ $b = 0.560213 - 0.299882I$	$2.05813 + 5.15332I$	$19.0308 - 6.5118I$
$u = -0.401638 + 0.943328I$ $a = -0.003706 - 0.972356I$ $b = 1.69468 + 0.58619I$	$-4.13468 - 1.27893I$	$6.22904 + 2.48332I$
$u = -0.401638 - 0.943328I$ $a = -0.003706 + 0.972356I$ $b = 1.69468 - 0.58619I$	$-4.13468 + 1.27893I$	$6.22904 - 2.48332I$
$u = 0.533553 + 0.717890I$ $a = -0.499113 - 0.115452I$ $b = -0.771593 - 0.101693I$	$-2.45331 + 1.97624I$	$7.42079 - 4.65833I$
$u = 0.533553 - 0.717890I$ $a = -0.499113 + 0.115452I$ $b = -0.771593 + 0.101693I$	$-2.45331 - 1.97624I$	$7.42079 + 4.65833I$
$u = -0.242610 + 1.170970I$ $a = 0.124452 + 1.367930I$ $b = -0.287544 - 0.335267I$	$-10.67730 - 4.79187I$	$4.90904 + 2.81945I$
$u = -0.242610 - 1.170970I$ $a = 0.124452 - 1.367930I$ $b = -0.287544 + 0.335267I$	$-10.67730 + 4.79187I$	$4.90904 - 2.81945I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.141690 + 0.552201I$ $a = 0.072479 - 0.208338I$ $b = -0.197604 + 0.959423I$	$-3.00514 + 5.34809I$	$2.18569 - 7.96624I$
$u = 1.141690 - 0.552201I$ $a = 0.072479 + 0.208338I$ $b = -0.197604 - 0.959423I$	$-3.00514 - 5.34809I$	$2.18569 + 7.96624I$
$u = 0.247480 + 0.680723I$ $a = -1.71388 + 3.04980I$ $b = 0.113602 + 0.371521I$	$-8.37839 + 4.78927I$	$-7.37609 - 10.15653I$
$u = 0.247480 - 0.680723I$ $a = -1.71388 - 3.04980I$ $b = 0.113602 - 0.371521I$	$-8.37839 - 4.78927I$	$-7.37609 + 10.15653I$
$u = -1.175820 + 0.580411I$ $a = -0.201812 - 0.121644I$ $b = 1.059910 + 0.852148I$	$-0.10165 - 2.03616I$	$9.54232 + 0.44456I$
$u = -1.175820 - 0.580411I$ $a = -0.201812 + 0.121644I$ $b = 1.059910 - 0.852148I$	$-0.10165 + 2.03616I$	$9.54232 - 0.44456I$
$u = 1.301190 + 0.209618I$ $a = 0.661986 - 0.991511I$ $b = -1.38761 + 1.80203I$	$2.05813 + 5.15332I$	$19.0308 - 6.5118I$
$u = 1.301190 - 0.209618I$ $a = 0.661986 + 0.991511I$ $b = -1.38761 - 1.80203I$	$2.05813 - 5.15332I$	$19.0308 + 6.5118I$
$u = 0.339308 + 0.591459I$ $a = -0.59919 - 3.85196I$ $b = -1.54924 + 0.17925I$	$-3.00514 + 5.34809I$	$2.18569 - 7.96624I$
$u = 0.339308 - 0.591459I$ $a = -0.59919 + 3.85196I$ $b = -1.54924 - 0.17925I$	$-3.00514 - 5.34809I$	$2.18569 + 7.96624I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.075291 + 0.633370I$ $a = \ \ 0.42574 - 1.35352I$ $b = -0.270546 - 0.037284I$	$-2.45331 - 1.97624I$	$7.42079 + 4.65833I$
$u = -0.075291 - 0.633370I$ $a = \ \ 0.42574 + 1.35352I$ $b = -0.270546 + 0.037284I$	$-2.45331 + 1.97624I$	$7.42079 - 4.65833I$
$u = -1.328000 + 0.437105I$ $a = \ \ 0.238908 + 0.776924I$ $b = -0.317094 + 0.353042I$	$-4.13468 - 1.27893I$	$6.22904 + 2.48332I$
$u = -1.328000 - 0.437105I$ $a = \ \ 0.238908 - 0.776924I$ $b = -0.317094 - 0.353042I$	$-4.13468 + 1.27893I$	$6.22904 - 2.48332I$
$u = \ \ 1.52739$ $a = -1.56471$ $b = \ \ 2.10462$	7.66275	-28.8150
$u = -1.01230 + 1.40773I$ $a = \ \ 0.490922 + 1.011800I$ $b = -2.20050 + 0.26772I$	$-16.6175 - 5.4104I$	$6.46581 + 2.30080I$
$u = -1.01230 - 1.40773I$ $a = \ \ 0.490922 - 1.011800I$ $b = -2.20050 - 0.26772I$	$-16.6175 + 5.4104I$	$6.46581 - 2.30080I$
$u = -1.18361 + 1.34447I$ $a = -0.495729 - 1.106020I$ $b = \ \ 3.09372 - 0.59515I$	$-8.37839 - 4.78927I$	$-7.37609 + 10.15653I$
$u = -1.18361 - 1.34447I$ $a = -0.495729 + 1.106020I$ $b = \ \ 3.09372 + 0.59515I$	$-8.37839 + 4.78927I$	$-7.37609 - 10.15653I$
$u = \ \ 1.26353 + 1.30740I$ $a = \ \ 0.682130 - 0.832341I$ $b = -2.34665 - 0.14641I$	$-10.67730 + 4.79187I$	$4.90904 - 2.81945I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.26353 - 1.30740I$ $a = 0.682130 + 0.832341I$ $b = -2.34665 + 0.14641I$	$-10.67730 - 4.79187I$	$4.90904 + 2.81945I$
$u = 1.22316 + 1.39721I$ $a = -0.519796 + 0.741917I$ $b = 2.51223 + 0.01536I$	$-16.6175 - 5.4104I$	$6.46581 + 0.I$
$u = 1.22316 - 1.39721I$ $a = -0.519796 - 0.741917I$ $b = 2.51223 - 0.01536I$	$-16.6175 + 5.4104I$	$6.46581 + 0.I$
$u = -0.0163031$ $a = 14.8699$ $b = -1.54968$	7.66275	-28.8150

III.

$\boldsymbol{I_3^u = \langle 1.97 \times 10^{16} u^{25} + 6.80 \times 10^{15} u^{24} + \cdots + 1.89 \times 10^{16} b + 5.92 \times 10^{16},\ 6.86 \times 10^{15} u^{25} - 1.50 \times 10^{16} u^{24} + \cdots + 1.89 \times 10^{16} a - 1.97 \times 10^{16},\ u^{26} - 8u^{24} + \cdots + 4u - 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.362882u^{25} + 0.794263u^{24} + \cdots - 6.49598u + 1.04151 \\ -1.04311u^{25} - 0.359516u^{24} + \cdots + 5.85758u - 3.13172 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1.24891u^{25} + 0.555400u^{24} + \cdots - 4.17834u - 1.29595 \\ -0.933911u^{25} - 0.362622u^{24} + \cdots + 5.78816u - 2.89286 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.644866u^{25} - 0.525042u^{24} + \cdots - 0.433835u + 2.06673 \\ -0.669601u^{25} - 0.198230u^{24} + \cdots - 0.570903u - 2.02388 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.31447u^{25} - 0.723272u^{24} + \cdots - 1.00474u + 0.0428499 \\ -0.669601u^{25} - 0.198230u^{24} + \cdots - 0.570903u - 2.02388 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.512169u^{25} + 0.425261u^{24} + \cdots - 7.59602u - 1.32012 \\ -2.68663u^{25} - 0.699913u^{24} + \cdots + 10.0675u - 7.75382 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.72730u^{25} + 0.723476u^{24} + \cdots - 9.50521u + 5.71869 \\ 2.84479u^{25} + 1.04945u^{24} + \cdots - 4.48272u + 6.55202 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.26940u^{25} + 0.646311u^{24} + \cdots - 9.21808u + 5.37962 \\ 2.47802u^{25} + 0.981294u^{24} + \cdots - 4.04635u + 6.29011 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.680670u^{25} - 0.925311u^{24} + \cdots + 6.55118u - 2.78413 \\ -0.946125u^{25} - 0.246566u^{24} + \cdots - 1.76142u - 4.29658 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{93950281467493955}{4728112264090751}u^{25} + \frac{32248120106658880}{4728112264090751}u^{24} + \cdots - \frac{27532282241 6113371}{4728112264090751}u + \frac{349499963017582750}{4728112264090751}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{13} - 8u^{12} + \cdots - 8u + 1)^2$
c_2	$(u^{13} + 4u^{11} - 2u^{10} + 3u^9 - 7u^8 - 5u^7 - 10u^6 - 8u^5 - 9u^4 - 3u^3 - 4u^2 - 1)^2$
c_3, c_{11}	$u^{26} - 8u^{24} + \cdots - 4u - 1$
c_4, c_8	$u^{26} - 3u^{25} + \cdots - 5u^2 - 1$
c_5, c_{12}	$u^{26} + 3u^{25} + \cdots - 5u^2 - 1$
c_6, c_9	$u^{26} - 8u^{24} + \cdots + 4u - 1$
c_7	$(u^{13} + 4u^{11} + 2u^{10} + 3u^9 + 7u^8 - 5u^7 + 10u^6 - 8u^5 + 9u^4 - 3u^3 + 4u^2 + 1)^2$
c_{10}	$u^{26} - 4u^{24} + \cdots + 104u^2 - 131$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{13} - 20y^{12} + \cdots - 4y - 1)^2$
c_2, c_7	$(y^{13} + 8y^{12} + \cdots - 8y - 1)^2$
c_3, c_6, c_9 c_{11}	$y^{26} - 16y^{25} + \cdots - 18y + 1$
c_4, c_5, c_8 c_{12}	$y^{26} + 11y^{25} + \cdots + 10y + 1$
c_{10}	$(y^{13} - 4y^{12} + \cdots + 104y - 131)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.817662 + 0.590599I$ $a = 0.935994 - 0.330693I$ $b = 0.220839 + 0.255226I$	$1.53627 - 5.17150I$	$2.98626 + 6.74281I$
$u = -0.817662 - 0.590599I$ $a = 0.935994 + 0.330693I$ $b = 0.220839 - 0.255226I$	$1.53627 + 5.17150I$	$2.98626 - 6.74281I$
$u = 0.805477 + 0.668712I$ $a = -0.470790 - 0.667412I$ $b = 0.160580 + 0.216270I$	$-3.28216 - 0.30187I$	$7.77799 + 0.28167I$
$u = 0.805477 - 0.668712I$ $a = -0.470790 + 0.667412I$ $b = 0.160580 - 0.216270I$	$-3.28216 + 0.30187I$	$7.77799 - 0.28167I$
$u = 0.400623 + 1.016220I$ $a = 0.10247 + 1.52610I$ $b = 1.406120 - 0.098892I$	$-0.92618 + 3.81353I$	$7.67664 - 4.03174I$
$u = 0.400623 - 1.016220I$ $a = 0.10247 - 1.52610I$ $b = 1.406120 + 0.098892I$	$-0.92618 - 3.81353I$	$7.67664 + 4.03174I$
$u = 1.039890 + 0.594363I$ $a = 0.150026 + 0.478822I$ $b = 0.217298 - 1.035160I$	$-2.42131 + 5.00871I$	$12.71310 - 2.53999I$
$u = 1.039890 - 0.594363I$ $a = 0.150026 - 0.478822I$ $b = 0.217298 + 1.035160I$	$-2.42131 - 5.00871I$	$12.71310 + 2.53999I$
$u = -1.155230 + 0.359006I$ $a = -0.511606 + 0.072561I$ $b = 0.24434 - 1.47710I$	$2.70797 + 1.25553I$	$8.00586 + 0.55931I$
$u = -1.155230 - 0.359006I$ $a = -0.511606 - 0.072561I$ $b = 0.24434 + 1.47710I$	$2.70797 - 1.25553I$	$8.00586 - 0.55931I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.297240 + 0.340645I$ $a = -1.197780 + 0.407415I$ $b = 1.92443 - 0.54500I$	$2.70797 + 1.25553I$	$8.00586 + 0.55931I$
$u = 1.297240 - 0.340645I$ $a = -1.197780 - 0.407415I$ $b = 1.92443 + 0.54500I$	$2.70797 - 1.25553I$	$8.00586 - 0.55931I$
$u = 0.252278 + 0.568954I$ $a = 1.74988 - 2.98359I$ $b = -0.143222 + 0.220123I$	$-8.07284 + 4.62322I$	$13.66718 + 0.84986I$
$u = 0.252278 - 0.568954I$ $a = 1.74988 + 2.98359I$ $b = -0.143222 - 0.220123I$	$-8.07284 - 4.62322I$	$13.66718 - 0.84986I$
$u = -1.373330 + 0.156774I$ $a = 0.905553 + 0.967197I$ $b = -1.90137 - 2.16497I$	$1.53627 - 5.17150I$	$2.98626 + 6.74281I$
$u = -1.373330 - 0.156774I$ $a = 0.905553 - 0.967197I$ $b = -1.90137 + 2.16497I$	$1.53627 + 5.17150I$	$2.98626 - 6.74281I$
$u = -0.532362 + 0.136318I$ $a = 2.51322 + 3.41291I$ $b = -1.42628 - 0.03798I$	$-2.42131 - 5.00871I$	$12.71310 + 2.53999I$
$u = -0.532362 - 0.136318I$ $a = 2.51322 - 3.41291I$ $b = -1.42628 + 0.03798I$	$-2.42131 + 5.00871I$	$12.71310 - 2.53999I$
$u = 0.392695 + 0.368909I$ $a = -1.043130 + 0.923864I$ $b = 1.071210 + 0.710954I$	$-3.28216 + 0.30187I$	$7.77799 - 0.28167I$
$u = 0.392695 - 0.368909I$ $a = -1.043130 - 0.923864I$ $b = 1.071210 - 0.710954I$	$-3.28216 - 0.30187I$	$7.77799 + 0.28167I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45772 + 0.27763I$ $a = -0.0889095 + 0.0267155I$ $b = 0.277827 - 1.329280I$	$-0.92618 + 3.81353I$	$7.67664 - 4.03174I$
$u = 1.45772 - 0.27763I$ $a = -0.0889095 - 0.0267155I$ $b = 0.277827 + 1.329280I$	$-0.92618 - 3.81353I$	$7.67664 + 4.03174I$
$u = -1.49925$ $a = -1.61075$ $b = 2.14047$	7.75703	56.3460
$u = 0.309408$ $a = 0.394141$ $b = -1.51783$	7.75703	56.3460
$u = -1.17243 + 1.27604I$ $a = 0.563370 + 1.090940I$ $b = -2.86310 + 0.46404I$	$-8.07284 - 4.62322I$	$10.00000 + 0.I$
$u = -1.17243 - 1.27604I$ $a = 0.563370 - 1.090940I$ $b = -2.86310 - 0.46404I$	$-8.07284 + 4.62322I$	$10.00000 + 0.I$

IV. $\boldsymbol{I_4^u = \langle -u^2+b-1,\ a-u+1,\ u^3+u+1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u-1 \\ u^2+1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ u^2-u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2-u+1 \\ -u^2-1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ -u^2-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ 2u+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2+u-1 \\ 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u^2-u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 2u^2-u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2-2u+1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^3 - 2u^2 + u + 1$
c_2, c_6, c_9	$u^3 + u + 1$
c_3, c_7, c_{11}	$u^3 + u - 1$
c_4, c_8	$u^3 - u^2 - 1$
c_5, c_{12}	$u^3 + u^2 + 1$
c_{10}	u^3

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^3 - 2y^2 + 5y - 1$
c_2, c_3, c_6 c_7, c_9, c_{11}	$y^3 + 2y^2 + y - 1$
c_4, c_5, c_8 c_{12}	$y^3 - y^2 - 2y - 1$
c_{10}	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.341164 + 1.161540I$ $a = -0.658836 + 1.161540I$ $b = -0.232786 + 0.792552I$	$-5.50124 + 1.58317I$	$2.78324 - 3.90819I$
$u = 0.341164 - 1.161540I$ $a = -0.658836 - 1.161540I$ $b = -0.232786 - 0.792552I$	$-5.50124 - 1.58317I$	$2.78324 + 3.90819I$
$u = -0.682328$ $a = -1.68233$ $b = 1.46557$	4.42273	1.43350

V. $I_5^u = \langle b-1,\ a+1,\ u-1 \rangle$

(i) Arc colorings

$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_2 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$

$a_7 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$

$a_3 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$

$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$

$a_9 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_1 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$

$a_5 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_7	u
c_3, c_6, c_9 c_{10}, c_{11}	$u+1$
c_4, c_5, c_8 c_{12}	$u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_7	y
c_3, c_4, c_5 c_6, c_8, c_9 c_{10}, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -1.00000$ $b = \quad 1.00000$	4.93480	18.0000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^3-2u^2+u+1)(u^{13}-8u^{12}+\cdots-8u+1)^2$ $\cdot(u^{16}+15u^{15}+\cdots-732u+16)(u^{17}+24u^{16}+\cdots-9908u-1296)^2$
c_2	$u(u^3+u+1)$ $\cdot(u^{13}+4u^{11}-2u^{10}+3u^9-7u^8-5u^7-10u^6-8u^5-9u^4-3u^3-4u^2-1)^2$ $\cdot(u^{16}+5u^{15}+\cdots-30u+4)(u^{17}-2u^{16}+\cdots-26u+36)^2$
c_3, c_{11}	$(u+1)(u^3+u-1)(u^{16}-u^{15}+\cdots-3u-1)(u^{26}-8u^{24}+\cdots-4u-1)$ $\cdot(u^{34}+u^{33}+\cdots+180u-3)$
c_4, c_8	$(u-1)(u^3-u^2-1)(u^{16}+2u^{15}+\cdots+2u+3)(u^{26}-3u^{25}+\cdots-5u^2-1)$ $\cdot(u^{34}+2u^{33}+\cdots+220u-23)$
c_5, c_{12}	$(u-1)(u^3+u^2+1)(u^{16}+2u^{15}+\cdots+2u+3)(u^{26}+3u^{25}+\cdots-5u^2-1)$ $\cdot(u^{34}+2u^{33}+\cdots+220u-23)$
c_6, c_9	$(u+1)(u^3+u+1)(u^{16}-u^{15}+\cdots-3u-1)(u^{26}-8u^{24}+\cdots+4u-1)$ $\cdot(u^{34}+u^{33}+\cdots+180u-3)$
c_7	$u(u^3+u-1)$ $\cdot(u^{13}+4u^{11}+2u^{10}+3u^9+7u^8-5u^7+10u^6-8u^5+9u^4-3u^3+4u^2+1)^2$ $\cdot(u^{16}+5u^{15}+\cdots-30u+4)(u^{17}-2u^{16}+\cdots-26u+36)^2$
c_{10}	$u^3(u+1)(u^{16}-6u^{15}+\cdots+32u-32)(u^{17}+2u^{16}+\cdots+16u+31)^2$ $\cdot(u^{26}-4u^{24}+\cdots+104u^2-131)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^3-2y^2+5y-1)(y^{13}-20y^{12}+\cdots-4y-1)^2$ $\cdot(y^{16}-25y^{15}+\cdots-540400y+256)$ $\cdot(y^{17}-76y^{16}+\cdots-10988432y-1679616)^2$
c_2, c_7	$y(y^3+2y^2+y-1)(y^{13}+8y^{12}+\cdots-8y-1)^2$ $\cdot(y^{16}+15y^{15}+\cdots-732y+16)(y^{17}+24y^{16}+\cdots-9908y-1296)^2$
c_3, c_6, c_9 c_{11}	$(y-1)(y^3+2y^2+y-1)(y^{16}+y^{15}+\cdots-17y+1)$ $\cdot(y^{26}-16y^{25}+\cdots-18y+1)(y^{34}-y^{33}+\cdots-33762y+9)$
c_4, c_5, c_8 c_{12}	$(y-1)(y^3-y^2-2y-1)(y^{16}+22y^{15}+\cdots-130y+9)$ $\cdot(y^{26}+11y^{25}+\cdots+10y+1)(y^{34}+26y^{33}+\cdots-8794y+529)$
c_{10}	$y^3(y-1)(y^{13}-4y^{12}+\cdots+104y-131)^2$ $\cdot(y^{16}+2y^{15}+\cdots-12288y+1024)$ $\cdot(y^{17}+8y^{16}+\cdots-4084y-961)^2$